

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

TRANSLATION

PCT

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

To:

Date of mailing
(day/month/year)

See form PCT/ISA/210

Applicant's or agent's file reference

P2323 PCT

FOR FURTHER ACTION

See paragraph 2 below

International application No.

PCT/CH2005/000210

International filing date (day/month/year)

15.04.2005

Priority date (day/month/year)

16.04.2004

International Patent Classification (IPC) or both national classification and IPC

H01L33/00

Applicant

LUCEA AG

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/EP

Authorized officer

Facsimile No.

Telephone No.

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International application No.

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Box No. I

Basis of this opinion

1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
☐ This opinion has been established on the basis of a translation from the original language into the following language
_____, which is the language of a translation furnished for the purposes of international search (under Rule 12.3 and 23.1(b)).
2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
 - a. type of material
☐ a sequence listing
☐ table(s) related to the sequence listing
 - b. format of material
☐ in written format
☐ in computer readable form
 - c. time of filing/furnishing
☐ contained in the international application as filed.
☐ filed together with the international application in computer readable form.
☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table(s) relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

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Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	10, 12, 14-16, 20, 21, 29, 37	YES
	Claims	1-9, 11, 13, 17-19, 22-28, 30-36, 38-48	NO
Inventive step (IS)	Claims	—	YES
	Claims	1-48	NO
Industrial applicability (IA)	Claims		YES
	Claims		NO

2. Citations and explanations:

1 Reference is made to the following documents:

- D1: US 2003/189830 A1 (SUGIMOTO MASARU ET AL) 9 October 2003
- D2: WO 03/023857 A (LUCEA AG; STAUFERT, GERHARD) 20 March 2003
- D3: US 2003/102481 A1 (ISODA HIROTO) 5 June 2003
- D4: EP-A-1 187 226 (CITIZEN ELECTRONICS CO., LTD) 13 March 2002
- D5: WO 03/069685 A (BOARD KENNETH; ENFIS LTD (GB); EVANS GARETH PETER (GB)) 21 August 2003, mentioned in the application
- D6: WO 02/05356 A (HELLA FAHRZEUGTEILE AUSTRIA GMBH & CO KG; SZENCI, BELA; GERGER, MANFRE) 17 January 2002
- D7: PATENT ABSTRACTS OF JAPAN Vol. 0090, No. 69 (E-305), 29 March 1985 & JP 59 207674 A (MATSUSHITA DENKI SANGYO KK), 24.11.1984

2 The present application does not satisfy the requirements of PCT Article 33(1) because the subject matter of independent claims 1, 25, 28, 30, 46 and 48 is not novel within the meaning of PCT Article 33(2). Reasoning:

Box No. V

Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability;
citations and explanations supporting such statement

2.1 Document D1 discloses in Fig. 2:

A housing for an LED chip, comprising a concave mirror-type or diaphragm-type optical element (highly reflective coatings 18 in round recess 5' of the insulating member 4), a continuous heat-conducting path being provided by a fixing surface for the LED chip to surfaces of the optical element which are open to the outside, i.e. each of the elements forming the heat-conducting path is entirely metallic or is made of metal-filled plastic while said elements as a whole form a continuous heat sink for the LED chip (radiator plate 3 extends without interruption from the fixing surface of the chip to the rear).

In another embodiment, figure 25 shows a housing for an LED chip, comprising a concave mirror-type element (recesses 911) and a continuous heat-conducting path from a fixing surface of the LED chips towards the outside (thin metal substrate 912).

2.2 In figure 6a/6b, document D2 likewise shows a housing for an LED chip, comprising a concave mirror-type element (recesses 91a) and a continuous heat-conducting path from a fixing surface of the LED chip towards the outside (metallic base plate 81).

2.3 Such a housing is also shown in document D3

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	<p>(figures 1, 2) and in document D4 (figures 2, 3). The subject matter of claim 1 therefore lacks novelty (PCT Article 33(2)).</p>
3	<p>The same applies accordingly to independent claims 25 and 48, the subject matters of which are likewise not novel.</p>
4.1	<p>The subject matter of independent claim 28 is not novel over D2, page 9 lines 11-18, nor is it novel over D3, paragraph [0020], or novel over D4, figure 23.</p>
4.2	<p>Furthermore, the subject matter of independent claim 28 does not involve an inventive step over D1, because it would be obvious for the person skilled in the art to divide the structure shown in figure 20e to obtain separately-housed LEDs.</p>
5	<p>The subject matter of independent claim 30 is not novel over D1 (figure 16), nor is it novel over D2 (luminous panel in figures 6a and 6b).</p>
6	<p>The subject matter of independent claim 46 (housing for a light source) lacks novelty over D2 (figure 3).</p>
7	<p>The dependent claims do not contain any features which, in combination with the features of any claim to which they refer, meet the PCT requirements for novelty and inventive step; see D1-D7 and the respective passages cited in the</p>

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search report.